

SEQUENCE LISTING



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NAGAI, KAZUO

<120> A GENE CODING FOR PENICILLIN BINDING PROTEIN AND A METHOD FOR PRODUCING L-GLUTAMIC ACID

<130> 196811US0PCT

<140> 09/623,596

<141> 2000-09-05

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<151> 1999-03-05

<150> JP10-55608

<151> 1998-03-06

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<170> PatentIn version 3.0

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Ser Gln Gly Leu Leu Pro Ala Arg Glu Gln Trp Ser Gly Gly Thr Phe
435 440 445

Ala Asn Leu Pro Ile Gly Gln Gly Met Ser Ile Thr Thr Leu Gln Met
450 455 460

Ala Gly Ile Tyr Gln Ala Leu Ala Asn Asp Gly Glu Arg Ile Glu Pro
465 470 475 480

Arg Ile Ile Lys Ser Val Thr Asp Ser Asp Gly Thr Val Leu Glu Gln
485 490 495

Pro Glu Pro Asp Lys Ile Gln Val Val Ser Ala Glu Ala Ala Arg Thr
500 505 510

Thr Val Asp Met Phe Arg Ser Val Thr Gln Val Asp Pro Leu Gly Val
515 520 525

His Lys Val Pro Leu Gln Thr Pro Pro Leu Arg Val Ile Lys Ser Gln
530 535 540

Val Arg Gln Val Arg Arg Lys Lys Leu Thr Pro Thr Arg Ala Arg Thr
545 550 555 560

Leu Thr Arg Asn Thr Gly Leu Pro Ser Arg Val Leu His Pro Leu Met
565 570 575

Ile Leu Asp Leu Leu
580

<210> 3

<211> 555

<212> PRT

<213> Brevibacterium lactofermentum

<400> 3

Val Ser Phe Val Glu Phe His Asn Leu Asn Phe Cys Leu Asn Ser Phe
1 5 10 15

Arg His His Pro Arg Ala Ala Ser Glu Leu Leu Thr Pro Arg Asn Leu
20 25 30

Trp Arg Arg Glu Asn His Gly Asn His Val Ala Gly Pro His Gln Thr
35 40 45

Tyr Arg Trp His Pro Gln Gly Leu Cys Gln Gly Val Pro Ala His Ala
50 55 60

Val Gly Glu Gln Ala Ile Ala Ala Ile Gly Leu Asp Ser Ser Ser Leu
65 70 75 80

Pro Thr Ser Asp Ala Ile Phe Ala Ala Val Pro Gly Thr Arg Thr His
85 90 95

Gly Ala Gln Phe Ala Gly Thr Asp Asn Ala Ala Lys Ala Val Ala Ile
100 105 110

Leu Thr Asp Ala Ala Gly Leu Glu Val Leu Asn Glu Ala Gly Glu Thr
115 120 125

B. J.
Arg Pro Ile Ile Val Val Asp Asp Val Arg Ala Val Leu Gly Ala Ala
130 135 140

Ser Ser Ser Ile Tyr Gly Asp Pro Ser Lys Asp Phe Thr Leu Ile Gly
145 150 155 160

Val Thr Gly Thr Ser Gly Lys Thr Thr Thr Ser Tyr Leu Leu Glu Lys
165 170 175

Gly Leu Met Glu Ala Gly His Lys Val Gly Leu Ile Gly Thr Thr Gly
180 185 190

Thr Arg Ile Asp Gly Glu Glu Val Pro Thr Lys Leu Thr Thr Pro Glu
195 200 205

Ala Pro Thr Leu Gln Ala Leu Phe Ala Arg Met Arg Asp His Gly Val
210 215 220

Thr His Val Val Met Glu Val Ser Ser His Ala Leu Ser Leu Gly Arg

225 230 235 240
 Val Ala Gly Ser His Phe Asp Val Ala Ala Phe Thr Asn Leu Ser Gln
 245 250 255
 Asp His Leu Asp Phe His Pro Thr Met Asp Asp Tyr Phe Asp Ala Lys
 260 265 270
 Ala Leu Phe Phe Arg Ala Asp Ser Pro Leu Val Ala Asp Lys Gln Val
 275 280 285
 Val Cys Val Asp Asp Ser Trp Gly Gln Arg Met Ala Ser Val Ala Ala
 290 295 300
 Asp Val Gln Thr Val Ser Thr Leu Gly Gln Glu Ala Asp Phe Ser Ala
 305 310 315 320
 Thr Asp Ile Asn Val Ser Asp Ser Gly Ala Gln Ser Phe Lys Ile Asn
 325 330 335
 Ala Pro Ser Asn Gln Ser Tyr Gln Val Glu Leu Ala Leu Pro Gly Ala
 340 345 350
 Phe Asn Val Ala Asn Ala Thr Leu Ala Phe Ala Ala Ala Ala Pro Trp
 355 360 365
 Val Leu Met Ala Thr Phe Ala Arg Gly Met Ser Lys Val Ala Val Pro
 370 375 380
 Gly Arg Met Glu Arg Ile Asp Glu Gly Gln Asp Phe Leu Ala Val Val
 385 390 395 400
 Asp Tyr Ala His Lys Pro Ala Ala Val Ala Ala Val Leu Asp Thr Leu
 405 410 415
 Arg Thr Gln Ile Asp Gly Arg Leu Gly Ser Gly Tyr Arg Cys Trp Trp
 420 425 430
 Arg Arg Asp Ser Thr Lys Arg Gly Pro Met Gly Ser Cys Pro His Arg
 435 440 445
 Ser Gly Ser Ser Tyr Cys Thr Asp Ala Asn Leu Val Arg Val Ala Gly
 450 455 460

Thr Ile Arg Ala Ala Val Thr Ala Gly Ala Gln Gln Gly Ala Ser Glu
465 470 475 480

Ser Glu Arg Pro Val Glu Val Leu Glu Ile Gly Asp Arg Ala Glu Ala
485 490 495

Ile Arg Val Leu Val Glu Trp Ala Gln Pro Gly Asp Gly Ile Val Val
500 505 510

Ala Gly Lys Gly His Glu Val Gly Gln Leu Val Ala Gly Val Thr His
515 520 525

His Phe Asp Asp Arg Glu Glu Gly Arg Ala Ala Leu Thr Glu Lys Leu
530 535 540

Asn Asn Lys Leu Pro Leu Thr Thr Glu Glu Gly
545 550 555

<210> 4

<211> 293

<212> PRT

<213> Brevibacterium lactofermentum

Eny.
<400> 4

Met Ile Thr Met Thr Leu Gly Glu Ile Ala Asp Ile Val Gly Gly Arg
1 5 10 15

Leu Thr Gly Gly Ala Gln Glu Asp Thr Leu Val Ser Ser Ser Val Glu
20 25 30

Phe Asp Ser Arg Ser Leu Thr Pro Gly Gly Leu Phe Leu Ala Leu Pro
35 40 45

Gly Ala Arg Val Asp Gly His Asp Phe Ala Ala Thr Ala Ile Glu Lys
50 55 60

Gly Ala Val Ala Val Leu Ala Ala Arg Glu Val Asp Val Pro Ala Ile
65 70 75 80

Val Val Pro Pro Val Lys Ile Gln Glu Ser Asn Ala Asp Ile Tyr Ala
85 90 95

His Glu Pro Asp Gly His Gly Ala Ala Val Val Glu Ala Leu Ser Arg
100 105 110

Leu Ala Arg His Val Val Asp Ile Cys Val Ala Gly His Gln Leu Asn
115 120 125

Val Val Ala Ile Thr Gly Ser Ala Gly Lys Thr Ser Thr Lys Asp Phe
130 135 140

Ile Ala Thr Val Leu Gly Gln Asp Gly Pro Thr Val Ala Pro Pro Gly
145 150 155 160

Ser Phe Asn Asn Glu Leu Gly Leu Pro His Thr Val Arg Cys Thr Thr
165 170 175

Asp Thr Lys Tyr Leu Val Ala Glu Met Ser Ala Arg Gly Ile Gly His
180 185 190

Ile Lys His Leu Thr Glu Ile Arg Pro Pro Arg Ile Ala Ala Val Leu
195 200 205

Asn Val Gly His Ala His Leu Gly Glu Phe Gly Ser Arg Glu Asn Ile
210 215 220

Ala Gln Ala Lys Gly Glu Ile Ile Glu Ala Leu Pro Ser Lys Lys Thr
225 230 235 240

Bl. can.
Gly Gly Val Ala Val Leu Asn Ala Asp Asp Pro Phe Val Ala Arg Met
245 250 255

Ala Pro Arg Thr Lys Ala Arg Val Val Trp Phe Thr Thr Asp Ala Gly
260 265 270

Gln Ala Lys Lys Ser Asp Tyr Trp Ala Thr Ser Ile Ser Leu Asp Ala
275 280 285

Val Ala Arg Ala Ser
290

<210> 5

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

<223> Description of Artificial Sequence: synthetic DNA

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gcgcgaattc cgcaacctcg tcgtgacatg

30

<210> 6

<211> 34

<212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

<223> Description of Artificial Sequence: synthetic DNA

<400> 6

gcgcgaattc aagaccaata gccgcgattg cttg

34

B'
cord.